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ANNUAL REPORT
OF THE
BUILDING DEPARTMENT
FOR THE YEAR 1945.

BOSTON, March 12, 1946.

HON. JAMES M. CURLEY,
Mayor of the City of Boston.

SIR,— As required by the provisions of Acts of 1938, chapter 479, section 115, as amended, and section 24, chapter 3, Revised Ordinances of 1925, I submit herewith a statement concerning the activities and accomplishments of the Building Department during the year 1945.

JOHN J. MAHONEY,
Building Commissioner.

THE BUILDING DEPARTMENT.

Organized October 2, 1871, to provide for the regulation and inspection of buildings, the more effective prevention of fire, and the better preservation of life and property, the department immediately became a vital force in providing public safety to the citizens of Boston.

DIVISIONS OF DEPARTMENT.

Annexed is a brief description of each division of the Building Department and also tables which by figures and statistics indicate the work performed during the year just passed.

1547

ADMINISTRATIVE DIVISION.

Requirements of building law as they pertain to the establishment and recording of permits, licenses, documents, plans, surveys, reports, naturally involve a considerable amount of clerical work. The functioning of the various divisions composing the Building Department is largely dependent upon the efficiency of the clerical personnel. The constant interest of the employees of this division in the preparation and circulation of documents, drawings, forms and orders, is such that their services are invaluable.

CONSTRUCTION DIVISION.

Operates almost entirely in the field and is charged with the inspection of all buildings, except Federal and County buildings. The area of the city has been divided into districts and the Building Inspector in each district examines the materials and methods of construction now used in modern building and enforces, to the best of his ability, the requirements of statute law designed for the protection of life, limb and property. The statistics for the year 1945 are as follows:

INSPECTIONS AND REPORTS, 1945.

New buildings	1,461
Alterations	21,751
Existing buildings	3,375
Boilers	116
Building accidents	—
Fires	1,220
	<hr/>
	27,923
	<hr/>

EGRESS DIVISION.

The chief functions of the Egress Division are the inspection of buildings from the standpoint of exit facility in case of emergency, and the administration of the pertinent laws and regulations designed to achieve this purpose.

Due to the changes in the provisions of chapter 143 of the General Laws, more particularly the requirement that every license to be effective requires the assent of the commissioner by certificate or by acknowledgment, the work of the Division has been increased more than fivefold.

By recent enactments the Department of Public Safety retained jurisdiction over theaters, schools, churches and halls of greater than four hundred capacity. All other buildings come within the purview of the Egress Division. It should also be noted that the inspectors of the Division have a dual responsibility under the law in that they administer both State and City Codes. In those cases in which the provisions of the State Code are not operative the requirements of the Boston Building Code are applied.

Particular categories which require frequent and rigid inspection are hotels, lodging houses, taverns, restaurants, homes for the aged and all places of assembly as defined in section 1, chapter 143, of the General Laws.

INSPECTIONS MADE.

Theaters	1,535
Moving picture houses	1,570
Places of assembly	9,713
Lodging houses	1,953
Public lodging houses	310
Nurses' homes	187
Apartment houses	683
Dwellings	463
Hotels	742
Homes for aged	165
Homes for infants	126
Hospitals	400
Mercantile buildings	1,488
Office buildings	137
Stores (retail or variety)	555
Factories	362
Schools	563
Fire escapes	401
Day nurseries	27
Total field inspections	21,380*

SUPERVISORY.

Consultations	2,275
Plans examined	1,546
	3,821
Total field and office operations	25,201

* 1,143 night and holiday inspections included.

CLERICAL.

Letters received	884
Letters sent	1,688
Special Officers' reports	726
Requests for inspections received and acknowledgments issued therefor . . .	2,528

PLAN DIVISION.

Existing building law requires the submission of drawings indicating by architectural, engineering and mechanical design the type and class of construction, the occupancy, the materials which compose the structure proper, the dimensions designating areas, sizes of rooms and heights of building, width of stair halls and other egresses, percentages of area of lot occupied by the building, mechanical installations, locations of and sizes of exterior fire escapes and balconies.

Drawings are examined and approved or disapproved by the Zoning, Egress and Plan Divisions, also the Plumbing, Gas, Elevator and Sprinkler Divisions, and the Health Department and Park Department when the administration of regulations of these departments are applicable.

The citizens of the city have been so long accustomed to the results of the work of its Building Department that they take these results for granted. The houses in which they live; the offices, factories or stores in which they work; the theaters, moving picture houses, halls and places of public assembly in which they spend their hours of recreation; the schools and hospitals; the churches in which they worship — are all structures, the design and construction of which have been carefully checked and supervised.

1940.

	First Class.	Second Class.	Third Class.	Alterations.	Amendments.	Specials.	Total.
Approved	10	27	23	1,041	165	97	1,363
Not approved	1	6	7	104	22	19	249
Totals	11	33	30	1,145	187	116	1,612

Immediate action permits issued at counter . 4,489

ZONING DIVISION.

Analogous to the work of the Plan Division, which is wholly administrated by the office personnel, is the work of the Zoning Division, which varies from that of the Plan Division in that drawings are analyzed and approved as being in compliance with the Zoning Law, a separate Act of the Legislature, whereas the Plan Division analyzes and approves the drawings as being in compliance with Building Law.

The Zoning Regulations as enacted is an Act regulating and restricting the use of buildings and premises, the height and bulk of buildings, and the occupancy of lots in the City of Boston and for said purposes dividing the city into districts.

The following table summarizes the work of 1940:

Number of applications received for new buildings and alterations and zoned according to districts:		
Approved	1,987	
Not approved	543	
	<hr/>	2,530
Number of applications forwarded from Board of Street Commissioners for garage and gasoline licenses to be zoned before action taken by that board:		
Approved	269	
Not approved	86	
	<hr/>	355
Applications for signs from State House:		
Approved	147	
Not approved	16	
	<hr/>	163
Applications from Police and Licensing Boards for new licenses and renewals:		
Approved	1,076	
Not approved	29	
	<hr/>	1,105
Total	<hr/>	<u>4,153</u>

PLUMBING DIVISION.

The art of plumbing means the incorporation into a structure of such pipes, fixtures and other apparatus and appurtenances as are necessary to bring in the water supply and remove liquids and water-carried

wastes. As public health is vitally dependent on properly designed and constructed supply and waste systems, the importance of the Plumbing Division and its inspection force can readily be realized.

PLUMBING INSPECTIONS AND TESTS, 1945.

Plumbing, new	387
Plumbing, alterations	8,171
Plumbing, tests	490
Total	<u>9,048</u>

GAS FITTING DIVISION.

The Gas Fitting Division inspects the installation of gas fitting and gas appliances, particularly as to proper combustion and the elimination of gases and fumes through proper types of flues, also as to the locations of appliances in the room and its enclosure, and insists upon having a proper supply of air maintained to prevent the accumulation of carbon monoxide gas.

Accidental fatalities due to illuminating gas installations have, by rigid inspection and administration of law, been reduced from 82 in 1918 to 3 in 1945.

GAS FITTING INSPECTIONS AND TESTS, 1945.

Gas Fitting, new	602
Gas Fitting, alterations	11,880
Gas Fitting, tests	3,187
Total	<u>15,669</u>

GAS FITTERS' LICENSES, 1945.

Master, new	92
Master, renewal	427
Journeyman, new	132
Journeyman, renewal	497
Total	<u>1,148</u>
Fees	<u>\$1,352.50</u>

ELEVATOR DIVISION.

Undoubtedly every person inhabiting or frequenting the multistoried buildings in our city realizes the convenience provided them by the installation of elevators and dumb-waiters. However, very few are aware of the fact that each installation is made under the scru-

tinizing eye of the Building Department, through the agency of the Elevator Inspection Division.

There are in use within the city limits 6,207 passenger and freight elevators and escalators, and 1,997 dumb-waiters. In addition to the inspection of installation and maintenance of all elevators, these inspectors give an exacting and practical operation test to each passenger car operator.

ELEVATOR INSPECTIONS AND TESTS, 1945.

Inspections made	9,012
Complaints made	2,487
Complaints closed	1,989
Applications closed	2,641
New installations	78
Passenger elevators	28
Freight elevators	21
Escalators	2
Inclinators	1
Dumb-waiters	26
Alterations and repairs	964
Elevators shut down	19
Tests made	3,786
Approved	3,757
Failed — passenger	11
freight	18
Night tests	84
Accidents	57
Passenger	18
Freight	38
Escalators	—
Inclinators	—
Dumb-waiters	1
Fatal	6
Non-fatal	51
	<hr/>
	21,033
Applicants tested for elevator operators' licenses	1,694
	<hr/>
Total	<u>22,727</u>

LICENSES GRANTED TO OPERATE ELEVATORS, 1945.

New	1,682
Renewals	4,060
Duplicates	60
“Out of Town”	9
Fee Waived	130
	<hr/>
Total	<u>5,941</u>

SPRINKLER DIVISION.

In the year 1914, laws were enacted requiring sprinkler and standpipe equipment in certain buildings other than theaters, and a large number of such installations have been made.

As is well known, a fire may occur in a first-class building or in a wooden shed, and it is to be regretted that the use of automatic fire protection is not more general, especially as such installation brings about monetary reward in reduced insurance, aside from protection of life and property. The ultimate in automatic protection is reached when the system is so installed that the devices are influenced by heat in the shortest space of time and when the fire causing that heat is extinguished with the least amount of water.

FIRE RECORD, 1945

Number of fires in sprinklered buildings	204
Number controlled before sprinklers operated	60
Number controlled by one sprinkler	87
Number controlled by two sprinklers	32
Number controlled by more than two sprinklers	25
Examinations of sprinkler installations	2,161
Examinations of standpipes	213
Tests of both	3,014
	<hr/>
	5,388
	<hr/>

SUMMARY OF EXAMINATIONS AND REPORTS, 1945.

New buildings	1,461
Alterations	21,751
Existing buildings	3,375
Boilers, engines, etc.	116
Plumbing, new	387
Plumbing, alterations	8,171
Plumbing, tests	490
Gas Fitting, new	602
Gas Fitting, alterations	11,880
Gas Fitting, tests	3,187
Egress	21,380
Elevators	14,542
Sprinklers	2,161
Standpipes	213
Tests of both	3,014
Zoning	4,906
Plans and applications	6,652
Fires	1,220
Concrete and piling	573

BUILDING DEPARTMENT.

9

Gas asphyxiations	11
Building accidents	9
Complaints made	449
Specials	4
Finals	3,030
Communications acted on	2,408
Special detail	2,469
Complaints referred to Law Department for prosecution	110
Cases taken into court	53

FINANCIAL REPORT, 1945 — EXPENDITURES.

A. PERSONAL SERVICE:

1. Permanent employees	\$223,225 78
2. Temporary employees	21,044 38
4. Other departmental work	200 00

B. SERVICE OTHER THAN PERSONAL:

1. Printing and binding	103 00
3. Advertising	12 75
4. Transportation of persons	3,886 65
12. Bond and insurance premiums	12 50
14. Motor vehicle repairs and care	244 11
29. Stenography and copying	186 00
35. Fees, service of venires, etc.	44 00
39. General plant	91 55
42. Miscellaneous	105 00

C. EQUIPMENT:

10. Library	21 00
15. Tires, tubes and accessories	65 42
17. Miscellaneous	13 80

D. SUPPLIES:

1. Office	2,561 07
11. Motor vehicle	148 59
13. Chemicals and disinfectants	1 00
16. Miscellaneous	9 00

E. MATERIALS:

10. Electrical	10 43
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F. SPECIAL ITEMS:

7. Pensions and annuities	1,350 00
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Grand Total \$253,336 03

Appropriation \$233,099 66

Income \$49,414 00

Special appropriation, unsafe buildings \$63,073 50

GENERAL STATISTICS.

Area of Boston:

30,598 acres or 47.81 square miles.

On January 1, 1945, there were (estimated) in the City of Boston:

Brick and other fire-resistive buildings	45,028	
Erected during year	132	
	—	45,160
Taken down during year	100	
Totally destroyed by fire	0	
	—	100
Existing on January 1, 1946		45,060
Wood buildings	92,610	
Erected during year	86	
	—	92,696
Taken down during year	209	
Totally destroyed by fire	0	
	—	209
Existing January 1, 1946		92,487
Total number (estimated) of buildings in Boston on January 1, 1946		<u>137,547</u>

ITEMS OF INTEREST.

Tallest buildings:

Custom House, 495 feet.

United Shoe Machinery Building, 290 feet.

New England Mutual Life Insurance Company Building
Tower, 280 feet.

Ames Building, 196 feet.

Sears-Roebuck Building, 192 feet.

Tower Building, 245 feet.

Post Office Building, 345 feet.

Court House, 330 feet.

Massachusetts General Hospital Surgical Building, 188
feet.

Covering greatest ground area:

South Station, 1,467,522 square feet.

Smallest mercantile building:

212 State street, $2\frac{1}{2}$ stories high, 4 feet 9 inches front, 50
feet deep, ground area, $237\frac{1}{2}$ square feet.

Costliest building:

Storehouse, Army Supply Base, South Boston.

Oldest building:

Paul Revere House, 1660.

Largest garage under a single roof in the world, Motor Mart.

Statement of Building Operations in the City of Boston for the Year Ending December 31, 1945.

	1945.		1944.		1943.		1942.		1941.	
	Num- ber.	Cost.	Num- ber.	Cost.	Num- ber.	Cost.	Num- ber.	Cost.	Num- ber.	Cost.
Type I.....	36	\$1,915,364	13	\$280,226	52	\$5,292,690	57	\$5,614,690	59	\$4,307,229
Type II.....	1	6,000	—	—	—	—	—	—	—	—
Type III.....	1	30,000	—	—	—	—	—	—	—	—
Type IV.....	49	370,550	28	195,050	37	309,936	38	297,475	133	1,596,645
Type V.....	24	339,825	24	43,355	38	31,509	57	423,695	84	414,485
Type VI.....	86	323,230	22	134,785	77	160,130	249	884,090	512	1,756,575
Total new construction.....	218	\$3,004,969	87	\$653,516	204	\$5,844,265	401	\$7,219,950	788	\$8,074,934
Alterations, repairs, etc.....	5,663	6,636,175	4,443	3,613,847	3,819	2,991,265	3,135	2,521,944	3,954	4,004,388
Total structural construction.....	5,881	\$9,641,144	4,530	\$4,267,363	4,023	\$8,835,530	3,536	\$9,841,894	4,742	\$12,079,322
Plumbing.....	1,769	\$736,062	1,407	\$403,630	1,239	\$416,858	1,939	\$618,466	3,280	\$1,712,465
Gas Fitting.....	3,263	213,983	3,325	207,563	2,872	213,665	3,959	639,454	6,507	1,041,508
Heaters, ovens, engines, etc.....	166	188,409	119	95,441	105	99,736	244	100,653	485	326,266
Elevators, new freight.....	28	65,466	25	102,021	21	48,600	28	62,510	41	58,775
Elevators, new passengers.....	21	120,110	7	23,900	2	3,335	14	273,200	24	208,389
Elevators, alterations, freight.....	170	53,268	203	71,537	180	26,332	161	53,228	200	37,906
Elevators, alterations, passengers.....	231	67,085	269	60,842	288	75,418	299	69,712	359	120,175
Signs, marquees, projections, etc.....	251	54,123	152	21,513	114	12,416	177	23,736	430	92,966
Fire escapes.....	105	37,908	81	25,600	194	43,059	51	10,085	67	16,209
Take-downs, wood.....	209	60,109	240	85,321	175	44,297	510	138,859	605	144,902
Take-downs, brick, etc.....	100	98,120	90	81,284	58	49,271	98	38,509	459	169,862
Sprinklers.....	57	88,738	43	67,428	26	48,784	52	51,290	71	93,275
Excavations.....	—	—	3	1,500	3	1,900	2	300	7	5,900
Use of premises.....	37	—	31	—	14	—	15	—	50	—
Totals.....	6,308	\$1,780,381	5,995	\$1,247,680	5,201	\$1,043,671	7,549	\$2,080,002	12,285	\$4,038,598
Grand total all work.....	12,189	\$11,421,525	10,525	\$5,515,043	9,234	\$9,879,201	11,085	\$11,921,986	17,327	\$16,117,920
Department revenue.....	.....	\$49,414 00	.....	\$35,488 75	.....	\$30,809 75	.....	\$34,409 50	.....	\$50,106 85

BOARD OF APPEAL.

The Board of Appeal, established in accordance with section 117 of chapter 479, Acts of 1938, as amended, in its functioning, may vary the provisions of the Act referred to in specific cases which appear to them not to have been contemplated by this Act although covered by it, or in cases where manifest injustice is done, provided that the decision of the Board in such a case shall be unanimous and shall not conflict with the spirit of any provision of the Act.

Many of the appeals were in regard to technical questions as to the meaning of the law. The Building Code was originally written in 1938 and due to present-day living conditions, as well as the rapid growth and developments in industry, newer and better construction materials now on the market, the value of various commodities used such as steel and concrete (which have been proven by rigid, practical tests conducted by reputable Bureaus of Research and Science), many cases were those not contemplated by the Act although covered by it. In every instance where the Board granted relief — about 50 per cent of which were with modifications — the Board was unanimously of the opinion that the varying of the provisions of the Act did not conflict with the spirit of any provision of same, and that it was a specific case wherein it was a manifest injustice to refuse the appellant a permit.

The Board of Appeal provided for in paragraph 1 of section 6 of the Building Law also acts as a Board of Appeal under the Zoning Act (section 19, chapter 488, Acts of 1924).

Boston was many years old before the adoption of the Zoning Act, and because of technical violations of uses permitted in various zones, and problems arising in the advantageous development of vacant land in the City of Boston, proponents of business enterprises would have established their plans of industry in other cities where the Zoning Regulations are not so restrictive, had not the Board varied the application of the Zoning Act in specific cases. In every instance where a variation was permitted, the Board was convinced unanimously that a strict enforcement of the Act involved practical difficulty and unnecessary hardship, and that desirable relief was granted without substantially derogating from the intent and purpose of the Act.

The following is a statistical summary of the work of this department for the year 1945:

In re Building Law — chapter 479, Acts of 1938, as amended:

Appeals received	69
Appeals withdrawn	2
Appeals pending	3
Appeals sustained	18
Appeals sustained with proviso	27
Appeals dismissed	19

In re Zoning Law — chapter 488, Acts of 1924, as amended:

Appeals received	106
Appeals withdrawn	8
Appeals pending	4
Appeals sustained	32
Appeals sustained with proviso	39
Appeals dismissed	23

ANNUAL REPORT — 1945.

The Board of Examiners, established originally by ordinance in 1913 and now reestablished by chapter 479 of the Acts of 1938 as amended, acts upon applications of persons desiring to be registered as licensed superintendents on building operations in the City of Boston. The law states that the Board shall be made up of an architect or engineer, a contractor, and an attorney or other person with proper legal qualifications. The Board of Examiners holds examinations under certain rules and regulations adopted by it.

From the year 1920 to the time of enforcement of the aforementioned Acts of 1938, a regular procedure had been followed in qualifying applicants and in renewing annually or intermittently the licenses issued to them. However, in May, 1944, it was decided that a registration of all licensees should be begun. During the years of depression, hundreds of licenses had been allowed by the holders to lapse. Men had gone into defense work or government service or had entered the armed forces and had failed to continue their renewals. With the end of the war and the suddenly revived interest in renewal of license, the time was fortuitous for such new recording. Moreover, most of the classes of license must be changed to conform to the structures in the new code. Thereupon each person applying for renewal was instructed to file a new application for registration or for extension of license to other classes. This work has continued and will do so until all former registrants who are interested have been reached.

In addition, an unprecedented number of applications for new licenses have been filed. Classes have been rearranged, some being broken down into divisions so that men, especially those discharged from the service, ambitious to enter the building business but without the experience necessary to qualify for established classes may be allowed to take charge in certain restricted groups. This break-down is helpful also to owners who, through the war years, were obliged to forego improvements and repairs on properties and who now find small alterations really necessary. In September, 1945, by an opinion of the Corporation

Counsel, the special-license privilege was abolished. The influx of men of the type formerly covered by this kind of license is an additional reason for the establishment of limited classes.

The following is a list of applications acted upon:

	Approved	Rejected
For new license	1,372	205
For renewal and reissue	3,771	—
For special license	337	181

The fees collected amounted to \$6,507.





